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BROWN reports no determinations of osmotic pressure, but finds that if closed leaves of *Dionaea* are killed, before the extension of the cells has become fixed, and passed through alcohol to xylene, the leaves reopen, and close again when passed back through alcohol to water. He concludes that the increase in size of the cells is due to increased osmotic pressure. He believes there is no permeability change, and thinks changes in the elasticity of the cell walls improbable. It is interesting if, in fact, the mechanics of these two responses, so similar in many respects, are so widely different in another.

Geotropic bending of growing organs is similar in many respects to the movements studied. Its comparative slowness should make it somewhat easier to follow, and the results might furnish valuable suggestions as to the mechanics of these more rapid movements. SMALL[27] has found differences in permeability in the two flanks of *Vicia Faba*, roots bending geotropically.—THOMAS G. PHILLIPS.

Soil moisture studies.—The extensive investigations of BRIGGS and SHANTZ have shown the importance of the moisture equivalent as a constant that will measure the physical properties of soils. Two recent studies deal with certain phases of the same phenomena. The first[28] shows that while the addition of various salts does not materially change the moisture equivalent of the soil under investigation, if the same salts are washed from the soil with water it then seems to possess a new and peculiar set of physical properties and its moisture equivalent is markedly increased. This increase varies from 2 to 40 per cent, and is taken to mean that the washing out of the salt has increased the interior surface of the soil.

The second article, by SMITH,[29] reports the investigation of the relationship between the results of mechanical analysis and the moisture equivalent. He concludes that there is at present no formula that gives more than a rough approximation of this relationship, and hence that the moisture equivalent cannot be indirectly determined by mechanical analysis with any degree of accuracy.—GEO. D. FULLER.

Soil aeration and root growth.—Roots of various plants appear, according to the results of CANNON and FREE,[30] to respond quite differently to variations in the composition of the soil atmosphere, and this difference in response seems

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[27] SMALL, JAMES, Geotropism and the Weber-Fechner law. Ann. Botany **31**:313-314. 1917.

[28] SHARP, L. T., and WAYNICK, D. D., The moisture equivalent determinations of salt-treated soils and their relation to changes in the interior surfaces. Soil Sci. **4**:463-469. 1917.

[29] SMITH, ALFRED, Relation of the mechanical analysis to the moisture equivalent of soils. Soil Sci. **4**:471-476. 1917.

[30] CANNON, W. A., and FREE, E. E., The ecological significance of soil aeration. Science, N.S. **45**:178-180. 1917.